

3/14/02

ONS 1EOC-20 Steam Generator Inspection Plans

ECT Inspection Scope

Bobbin Coil (0.510 dia. MF) 100% A-OTSG
100% B-OTSG

Lane and Wedge MRPC Two Rows Around Sleeved Tubes
(0.460 dia. Plus Point)

MRPC Upper Tubesheet Roll 100% A-OTSG
(0.460 dia. Plus Point) 100% B-OTSG

MRPC Re-rolls Upper Tubesheet 100% A-OTSG
(0.460 dia. Plus Point) 100% B-OTSG

MRPC I-600 Plugs 100% A-OTSG
100% B-OTSG

Bobbin Sleeve Exam 100% Sleeves A-OTSG
(0.410 dia.) 100% Sleeves B-OTSG

Sleeve Upper and Lower Rolls 100% Sleeve Rolls A-OTSG
(0.400 dia Plus Point) 100% Sleeve Rolls B-OTSG

Kidney Region (Sludge Pile) 100% A-OTSG
(0.460 dia. Plus Point) 100% B-OTSG

RPC Special Interest (0.460 dia. Plus Point)

- 1) 100% Bobbin indications regardless of location
- 2) 100% of all dents regardless of size or location

3/14/02

Plugged Tube Inspection Scope

The proposed industry action plan lists the following recommendations for OTSG plants per BWOOG Letter to NEI:

"During the next scheduled outage for each OTSG plant, all plugs susceptible to over-pressurization defined by BWOOG Letter to NEI (OG-01-1814) will be removed, so that the tube can be inspected for signs of swelling. Alternatively, UT methods may be used to determine if water is present in the tube. If water is not present, the tube cannot over-pressurize and therefore no action is required for that outage."

The B&WOG letter to NEI (OG-01-1814) defines locations susceptible to SEVER as a result of over pressurization as follows:

1. *The tube has a plug that has been repaired in such a way that the joint integrity has been improved without removing existing water from the tube, AND*
2. The tube passes through a drilled hole in the uppermost tube support plate. Note: This is based on a FIV analysis and is currently being questioned by the NRC.

Populations susceptible to OVERPRESSURIZATION include the following categories:

1. All locations where an Alloy 600 rolled plug was removed from the UTS and replaced without dewatering.
2. All locations where an existing rolled plug was re-rolled under NCRs issued as a result of loose rolled plugs being discovered at Oconee-3 in 1994.

Plugs Requiring Inspection/Repair

- A. Tubes that require the upper plug to be removed
 - a. Tubes with a ribbed plug in the outlet and a ribbed plug replaced with a rolled plug in the inlet for the drilled tube hole locations.
 - b. Tubes with a repair weld in the lower and I600 upper.
- B. Tubes that require UT.
 - a. Tubes with a repair weld in the upper and a lower I600.
 - b. Tubes with rerolled plugs
- C. Tubes that require explosive plug inspection
 - a. Tubes with repair upper weld and a lower explosive.

3/14/02

D. Tubes that require adjacent tubes be stabilized

- a. Tubes with unique plug combinations where removal or UT is not possible.

Plug Populations on Unit 1

| <i>Plug Category</i> | <i>S/G 1A</i> | <i>S/G 1B</i> |
|---|----------------------|----------------------|
| <i>A-Remove Upper Plug</i> | <i>1</i> | <i>16</i> |
| <i>B-UT Inspection for water</i> | <i>31</i> | <i>119</i> |
| <i>C-Eddy Current Plugs</i> | <i>19</i> | <i>177</i> |
| <i>D-Adjacent tubes stabilized</i> | <i>0</i> | <i>3</i> |
| | | |
| | | |

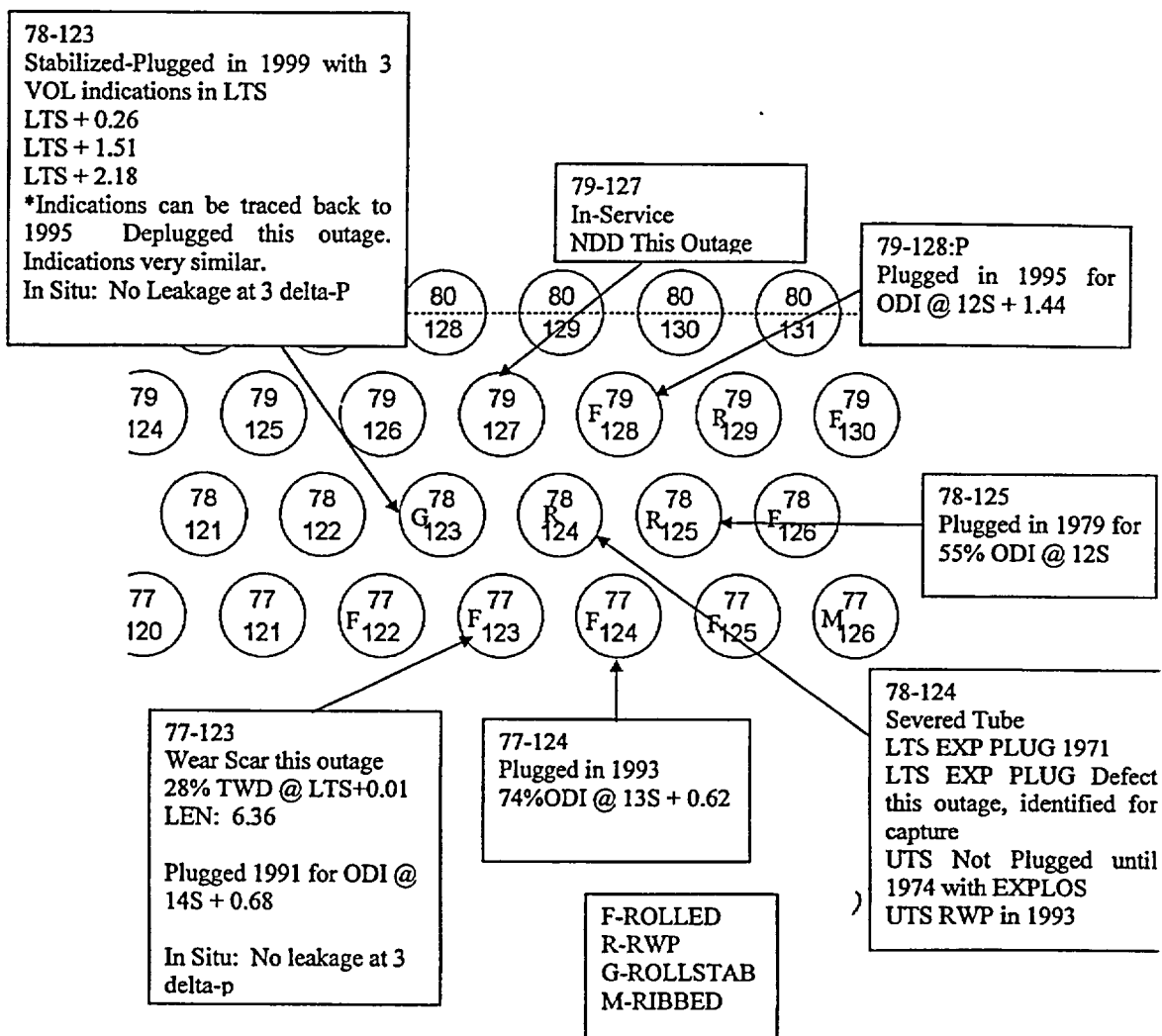
UT Inspection Process

A process for inspection the tubes to verify if water is present has been qualified for application if the lower plug is either a flat bottom plug or one with a threaded connection at the end of the plug. This process can measure the water level to 235". Therefore the acceptance criteria for acceptable water level will be 180" or approx. 27% full. Tubes with less than this amount of water will be acceptable for continued operation for one more cycle prior to S/G replacement. If water level exceeds this amount, the tube will be dewatered or plugged around since we can not verify the actual water level. Tubes that have verified through wall defects will not require repair since tube swelling is not possible if a leak path exists.

Davis-Besse Welded Tube Issue

Recent inspection of welded plugs by Davis Besse indicated that two welded plugs previously installed may have developed cracking in the weld areas. Also, a recent reanalysis of fatigue cycles for welded plugs by FANP indicates that the allowed heatup and cooldown cycles for welded plugs will be lower than previously calculated. However, the review of this data indicates that no welded plugs installed at ONS-1 have exceeded the new allowed fatigue cycles. Therefore, during the ONS-1 outage we will visually inspect all welded plugs to verify absence of leakage and overall condition of plug. We have performed this inspection in previous outages with no indications of degradation of welded plugs.

ONS-1B TUBE SEVER OF TUBE 78-124



77-123: Plugged in 1991 for 38% ODI @ 14S + 0.68
 77-124: Plugged in 1993 for 74% ODI @ 13S + 0.62
 78-123: Plugged in 1999 for VOLs above LTS (See Note Above)
 78-124: Possible Sever (See Note Above)
 78-125: Plugged in 1979 for 55% ODI @ 12S
 79-127: Currently In-Service
 79-128: Plugged in 1995 for ODI @ 12S + 1.44

12:22 PM 04/17/02